

FAS – Office of Global Analysis (OGA)
United States Department of Agriculture (USDA)
International Operational Agriculture Monitoring Program



February Summary

February 29th, 2008

1. Production for MY 2008/09 winter wheat and barley crop is forecasted to be lower than the previous year. The forecast is supported by historical agro-meteorological data, MODIS Normalized Difference Vegetation Index (NDVI) time-series data, and recently acquired high and moderate resolution satellite images. The most significant decreases in winter grains production are expected in the northern rainfed governorates. Decreases are also expected in the central and southern governorates, but appear to be concentrated in geo-specific areas.
2. Cumulative precipitation remains well below normal in the northern rainfed governorates, especially compared to the previous year (Figures 1 & 2). Recent precipitation events in the central and northern governorates should improve soil moisture for well established crops (Figure 3).
3. Normalized Difference Vegetation Index (NDVI) composites derived from MODIS 250-meter resolution imagery were compared to the previous year and analyzed for differences in cropland abundance (Figure 4). The analysis showed that current cropland abundance in the northern governorates is significantly less than the previous year. NDVI composites derived from AWiFS-P6 (February 19, 2008) also showed a very sparse cropland signature in the northern governorates (Figures 5). Further supporting evidence was derived from a region specific MODIS NDVI time series analysis; the current NDVI cropland signature is below the 5-year average (Figure 6).
4. AWiFS-P6 imagery (February 2008) was compared to archived Landsat imagery acquired during MY 2003/04 and MY 2000/01. The MY 2003/04 imagery assumes cropland cover during a decent production year and the MY 2000/01 imagery assumes cropland cover during a severe drought event (Figures 7 & 8).
5. MY 2008/09 production forecast was derived using the best available time series data and assumes an especially low winter grains production in the northern governorates (Table 1). Cropland area statistics were derived from a combination of moderate resolution AWiFS P-6 and coarser resolution MODIS NDVI composites; high resolution Quickbird imagery was used to validate the results. The area statistics are based entirely on the most current remotely sensed NDVI data and include combined estimates of wheat and barley. These figures are likely to change as the MY 2008/09 winter grains season progresses (Table 1).

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Table 1a: MY 2008/09 Wheat Production by governorate (Million Metric Tons)

REGION	Forecast							Change from Last Year	
	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	5 Yr Avg	Actual	Percent
Arbil	0.282	0.093	0.073	0.134	0.080	0.004	0.132	-0.076	-95.00%
Sulaymaniyah	0.038	0.025	0.037	0.033	0.030	0.004	0.033	-0.026	-86.67%
Dahuk	0.034	0.032	0.019	0.032	0.030	0.001	0.029	-0.029	-96.67%
Ninawa	0.360	0.535	0.378	0.501	0.320	0.010	0.419	-0.310	-96.88%
At Ta'min	0.146	0.237	0.343	0.241	0.289	0.075	0.251	-0.214	-74.06%
Salah ad Din	0.150	0.088	0.114	0.123	0.148	0.075	0.125	-0.073	-49.48%
Diyala	0.187	0.134	0.220	0.258	0.233	0.140	0.206	-0.093	-39.92%
Wasit	0.350	0.282	0.411	0.288	0.312	0.200	0.329	-0.112	-35.91%
Al Qadisiyah	0.143	0.146	0.209	0.238	0.238	0.200	0.195	-0.038	-16.12%
Babil	0.172	0.051	0.093	0.093	0.100	0.100	0.102	0.000	0.06%
An Najaf	0.091	0.054	0.078	0.107	0.135	0.100	0.093	-0.035	-26.08%
Baghdad	0.121	0.063	0.097	0.095	0.081	0.070	0.091	-0.011	-13.19%
Al Anbar	0.052	0.053	0.038	0.077	0.080	0.050	0.060	-0.030	-37.25%
Karbala	0.012	0.006	0.007	0.005	0.005	0.001	0.007	-0.004	-78.08%
Maysan	0.095	0.098	0.148	0.125	0.124	0.070	0.118	-0.054	-43.35%
Dhi Qar	0.029	0.050	0.064	0.105	0.101	0.080	0.070	-0.021	-20.83%
Al Muthanna	0.023	0.020	0.013	0.015	0.014	0.010	0.017	-0.004	-29.12%
Al Basrah	0.026	0.015	0.014	0.016	0.022	0.010	0.019	-0.012	-55.34%
Total	2.311	1.983	2.358	2.485	2.343	1.200	2.296	-1.143	-48.78%

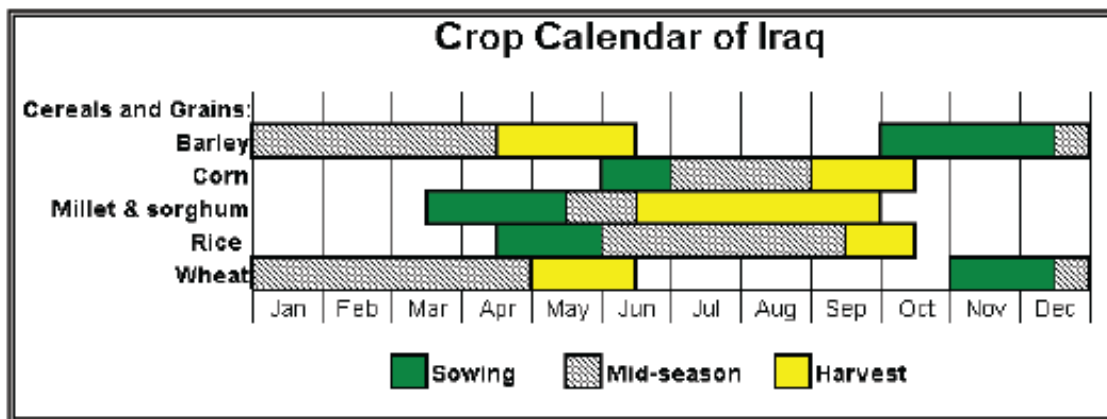
Table 1b: MY 2008/09 Barley Production by governorate (Million Metric Tons)

REGION	Forecast							Change from Last Year	
	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	5 Yr Avg	Actual	Percent
Arbil	0.164	0.081	0.136	0.170	0.140	0.004	0.138	-0.136	-97.14%
Sulaymaniyah	0.059	0.072	0.120	0.104	0.080	0.004	0.087	-0.076	-95.00%
Dahuk	0.042	0.032	0.018	0.052	0.040	0.001	0.037	-0.039	-97.50%
Ninawa	0.378	0.375	0.252	0.401	0.325	0.004	0.346	-0.321	-98.77%
At Ta'min	0.030	0.009	0.024	0.032	0.030	0.005	0.025	-0.025	-83.33%
Salah ad Din	0.024	0.014	0.008	0.011	0.005	0.002	0.012	-0.003	-60.00%
Diyala	0.133	0.028	0.043	0.041	0.040	0.025	0.057	-0.015	-37.50%
Wasit	0.075	0.058	0.070	0.065	0.065	0.040	0.067	-0.025	-38.46%
Al Qadisiyah	0.119	0.106	0.121	0.137	0.135	0.115	0.124	-0.020	-14.81%
Babil	0.035	0.016	0.018	0.021	0.020	0.020	0.022	0.000	0.00%
An Najaf	0.001	0.001	0.002	0.002	0.002	0.001	0.002	-0.001	-50.00%
Baghdad	0.065	0.005	0.008	0.006	0.005	0.004	0.018	-0.001	-20.00%
Al Anbar	0.004	0.002	0.002	0.002	0.002	0.001	0.002	-0.001	-50.00%
Karbala	0.001	0.002	0.002	0.002	0.002	0.001	0.002	-0.001	-50.00%
Maysan	0.035	0.055	0.091	0.081	0.080	0.060	0.068	-0.020	-25.00%
Dhi Qar	0.034	0.097	0.090	0.095	0.094	0.080	0.082	-0.014	-14.89%
Al Muthanna	0.030	0.030	0.018	0.019	0.020	0.015	0.024	-0.005	-25.00%
Al Basrah	0.009	0.006	0.004	0.005	0.005	0.003	0.006	-0.003	-50.00%
Total	1.237	0.990	1.029	1.245	1.090	0.385	1.118	-0.706	-64.72%

Source – Historical data sourced from COSIT and Kurdish MOA

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* Iraq Crop Calendar

Table 2: MY 2008/09 Wheat and Barley Cropland Area (1000 ha)

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Region	Governorate	2002/03	2003/04	2004/05	2005/06	2006/07	MY 2008/09 Estimate	5 -Year Avg	Difference
North	Arbil	242.6	255.0	185.1	387.5	369.4	6.6	287.9	-97.71%
	Dahuk	153.6	167.5	125.7	138.8	131.6	21.0	143.4	-85.38%
	Sulaymaniyah	285.6	285.8	122.3	277.8	228.6	52.4	240.0	-78.17%
South	Al Basrah	23.9	23.5	22.0	19.0	22.7	25.6	22.2	15.32%
	Maysan	99.8	100.7	143.3	158.7	151.9	75.1	130.9	-42.61%
	Dhi Qar	68.3	63.3	96.2	127.5	135.7	112.0	98.2	14.04%
	Al Muthanna	50.1	50.3	55.9	35.3	39.3	57.5	46.2	24.64%
Central	Baghdad	50.4	87.5	48.5	67.8	65.4	52.1	63.9	-18.53%
	Babil	73.6	100.0	70.2	87.6	91.8	115.9	84.6	36.96%
	Wasit	251.8	206.2	203.8	235.4	220.6	184.4	223.5	-17.51%
	Al Qadisiyah	151.1	150.0	171.1	171.5	174.4	155.7	163.6	-4.83%
	Karbala	5.6	5.6	8.0	9.8	6.6	6.7	7.1	-6.54%
	Al Anbar	35.5	35.3	46.2	36.9	58.9	44.3	42.5	4.12%
	An Najaf	46.0	45.8	47.6	49.4	47.0	46.5	47.1	-1.39%
	Diyala	188.8	188.5	125.5	145.6	148.6	147.6	159.4	-7.39%
	Salah ad Din	156.7	155.3	145.8	138.7	122.7	143.3	143.8	-0.37%
	Ninawa	1036.8	975.0	1142.5	1164.7	1083.9	13.2	1080.6	-98.78%
	At Ta'min	222.2	220.4	170.5	218.0	170.1	71.0	200.2	-64.54%
Total		3142.3	3115.4	2930.2	3470.1	3269.1	1330.9	3185.4	-23.82%

Source – Historical data sourced from AWIFS P-6, MODIS, Quickbird NDVI data;
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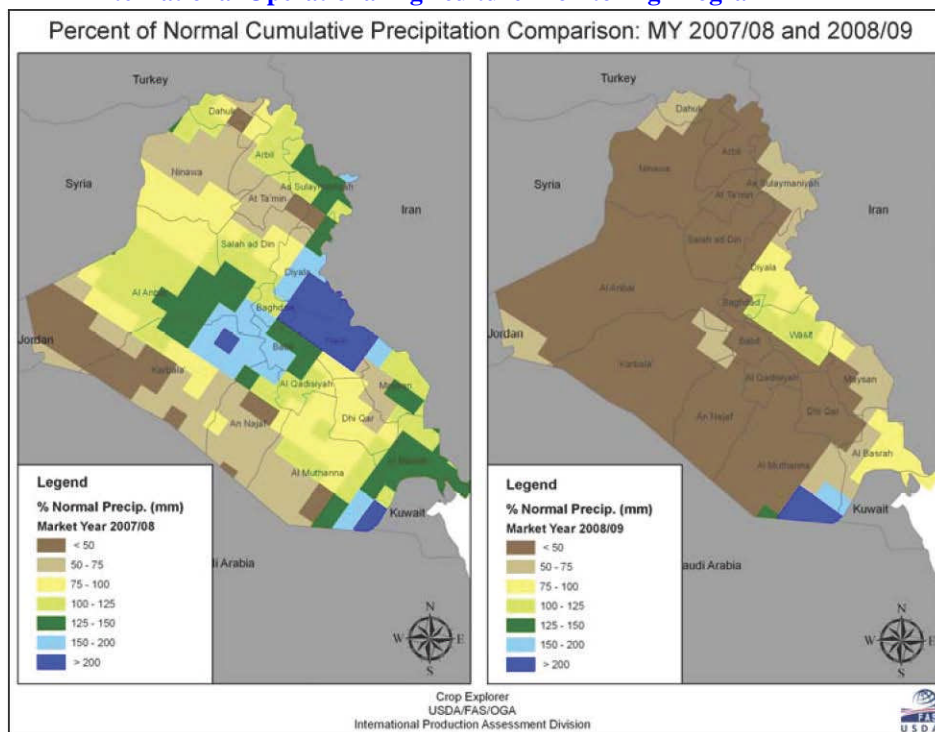


Figure 1: Percent of normal cumulative precipitation.

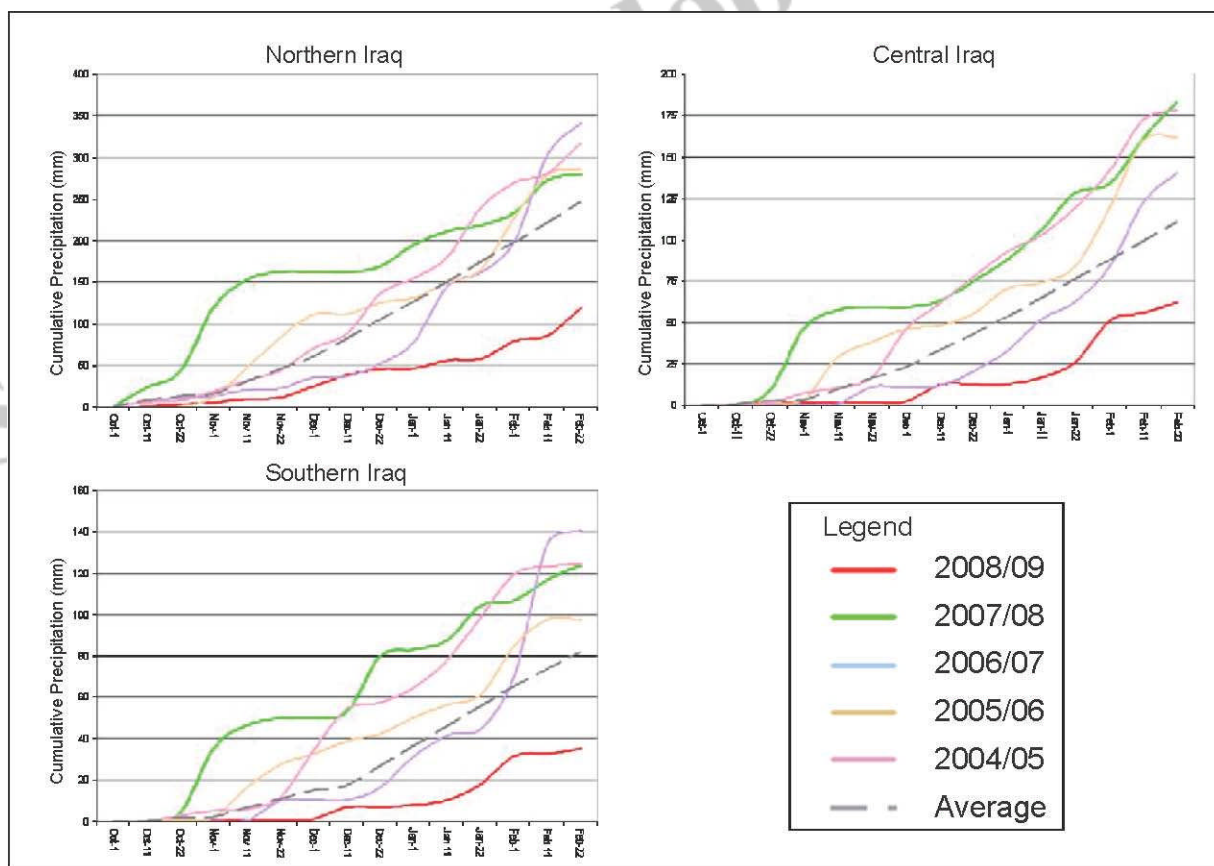


Figure 2: Time series of regional specific cumulative precipitation.

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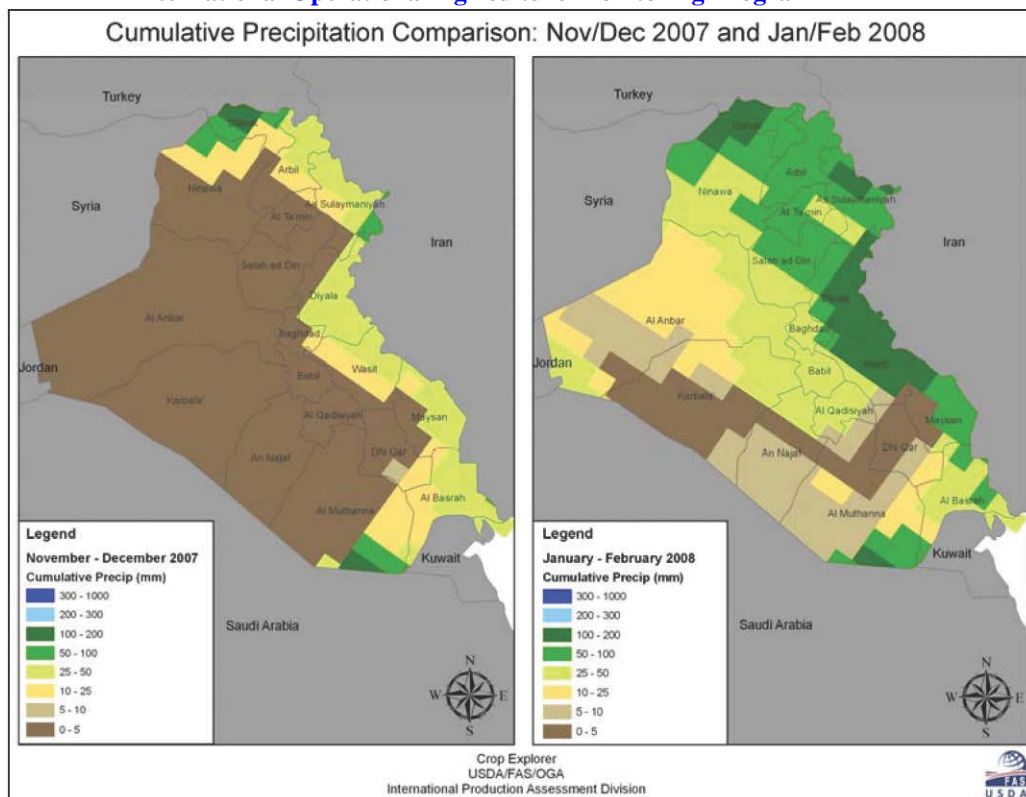


Figure 3: MY 2008/09 cumulative precipitation (planting vs. growing season)

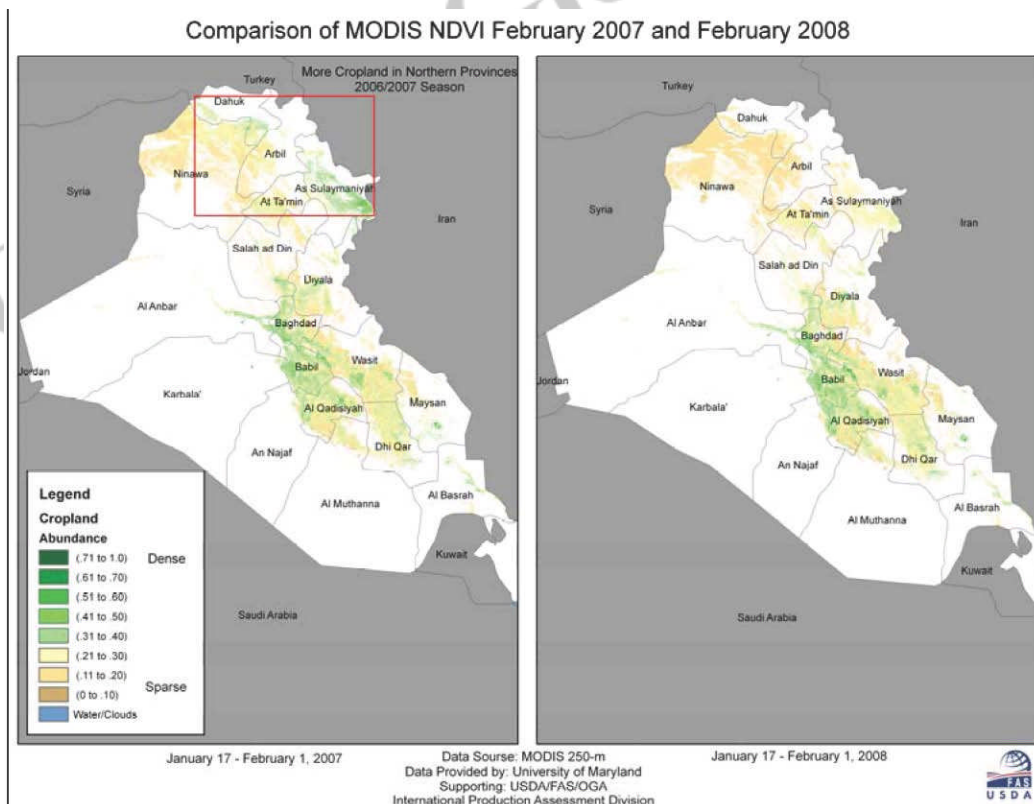


Figure 4: MODIS NDVI comparison.

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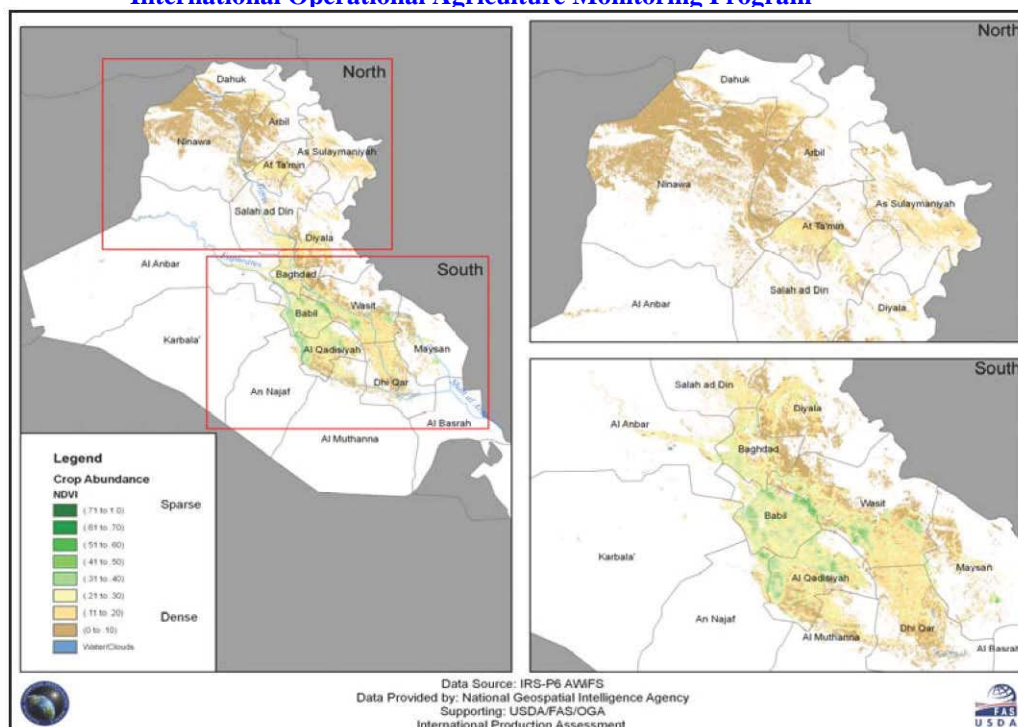


Figure 5: AWiFS NDVI: February 19, 2008.

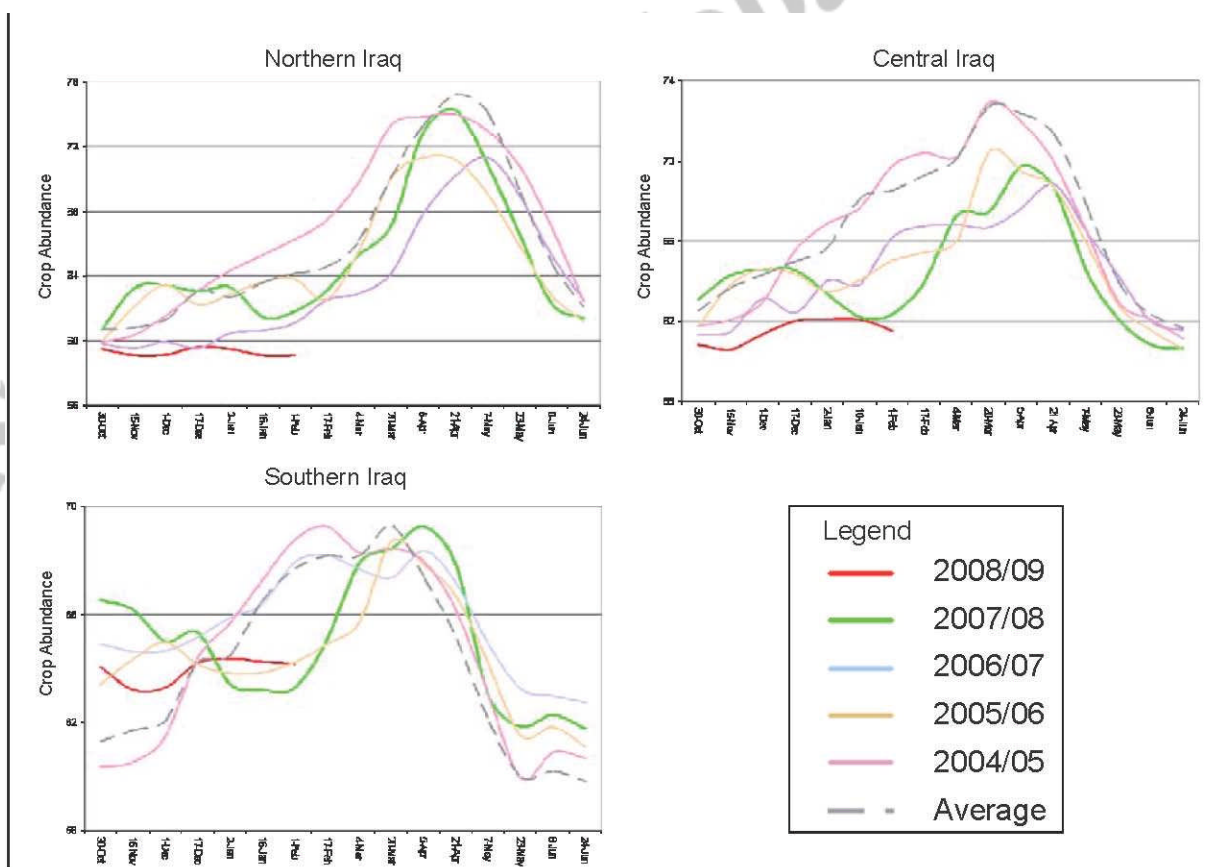


Figure 6: Region specific MODIS NDVI time series.

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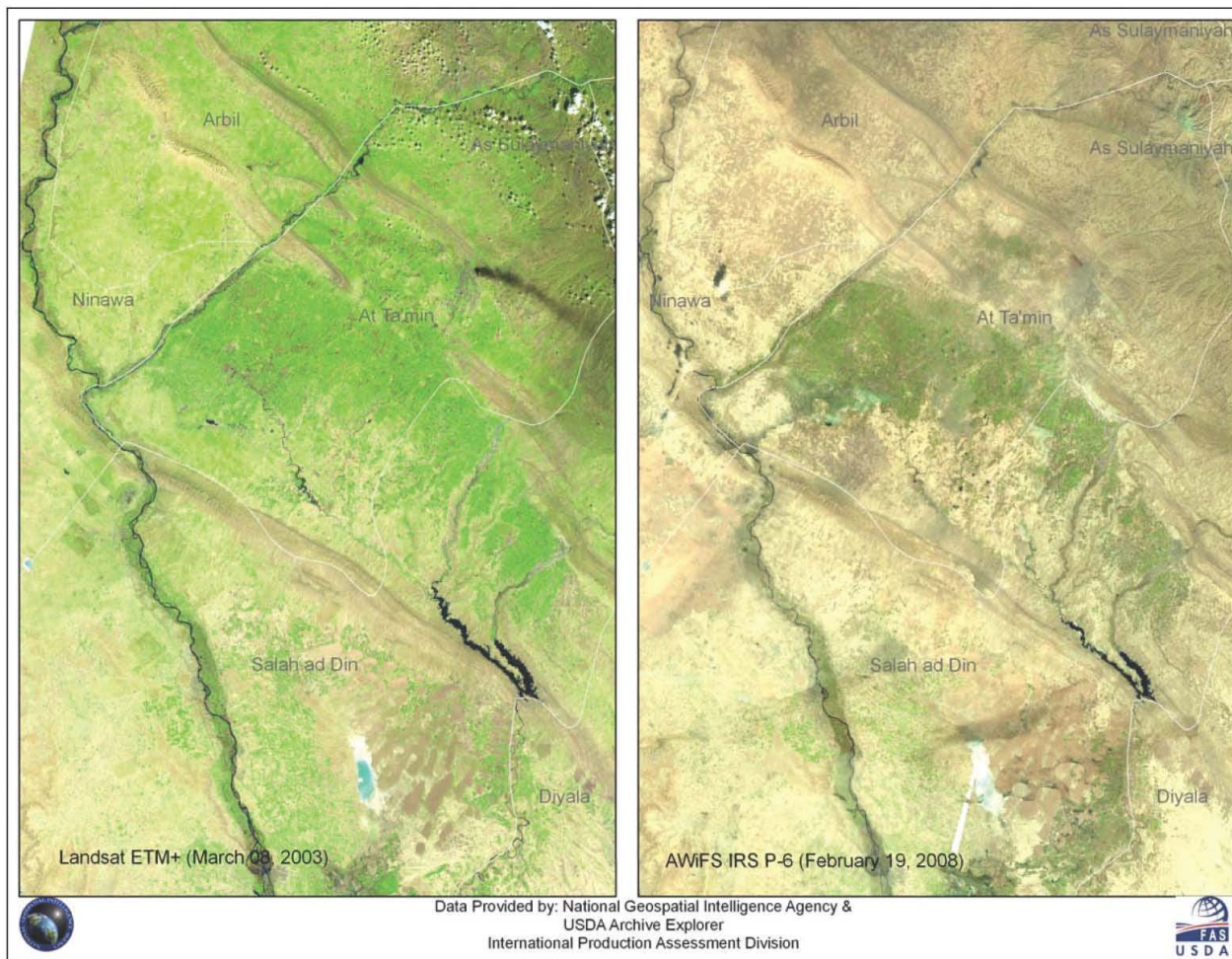


Figure 7: Comparison of cropland cover: March 08, 2003 and February 19, 2008 (MY 2003/04 vs. MY 2008/09)

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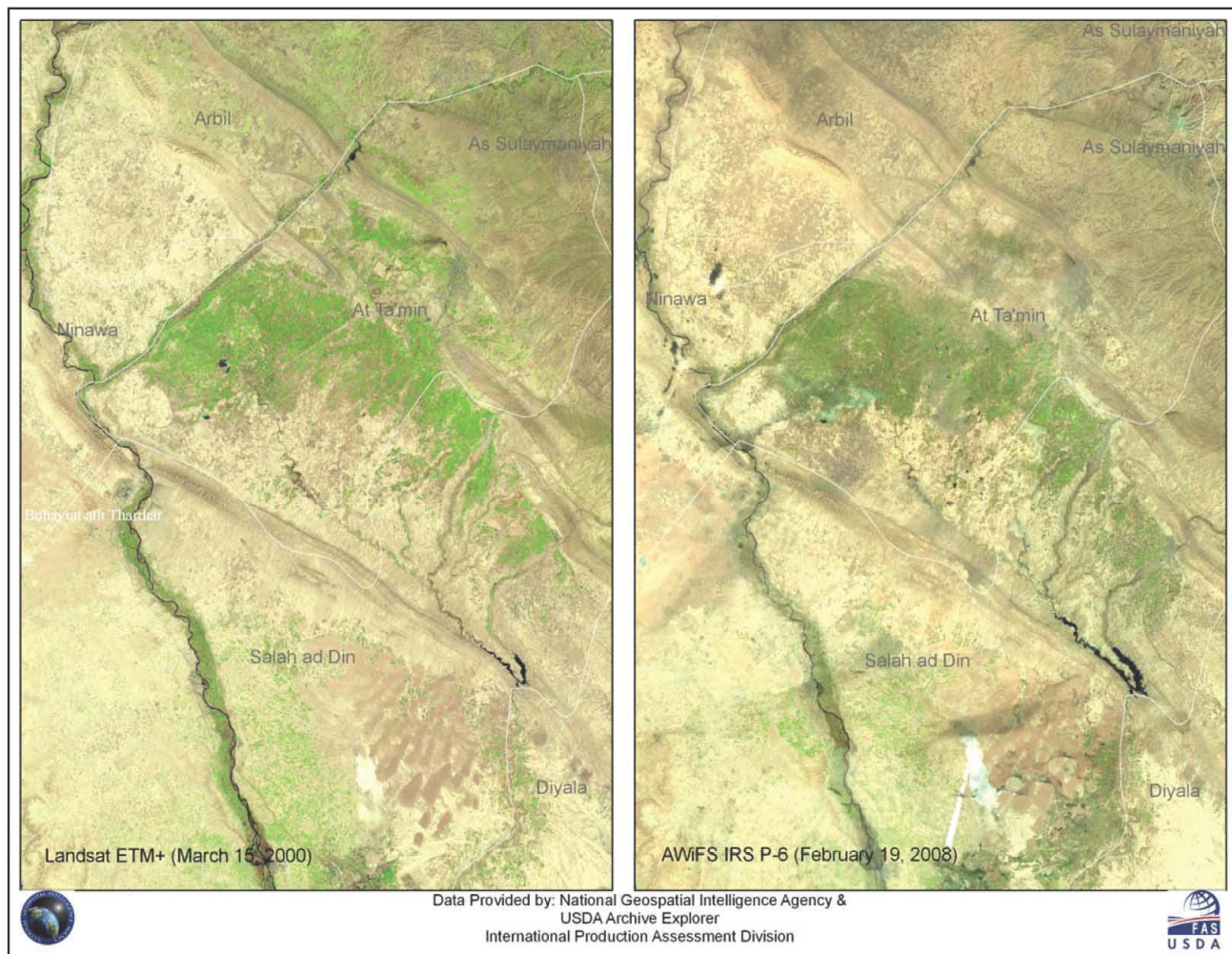


Figure 8: Comparison of cropland cover: March 15, 2000 and February 19, 2008 (MY 2000/2001 vs. MY 2008/09)